

REMARKS

In an Office Action dated March 22, 2006, the Examiner rejected claims 1, 11, 12, and 16-18 under 35 U.S.C. 112, second paragraph, as being indefinite. Applicant is amending claims 1 and 11 to overcome the Examiner's rejection concerning the insufficiency of the antecedent for the limitation "the adding of said surplus block".

Concerning the rejection of claims 11, 12, and 16-18, Applicant is amending claims 11-20 to recite a memory layout arrangement instead of apparatus comprising means plus function.

Applicant is also amending claims 1, 4, 11, and 14 to clarify some ambiguities, is canceling claims 9 and 19 because of the amendments of claims 1 and 11, and is canceling the first part of claims 10 and 20 because of the amendments of claims 1 and 11.

The Examiner rejected claims 1, 6-11, and 16-20 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,742,797 (Celi) and rejected claims 2-5 and 12-15 under 35 U.S.C. 103(a) as being obvious over Celi in view of U.S. Patent Publication 2003/0225991 A1 (Calderon). Applicant respectfully disagrees with the grounds for this rejection, especially as it applies to the amended claims.

Celi relates to a method of allocating and deallocating memory. Celi describes control blocks (shown in FIG. 3) and user blocks (shown in FIG. 4). The Celi control blocks are arranged in a linked list. Each control block is used for one user block and is therefore associated with different size blocks as required by the different user blocks. The control blocks are linked and arranged in a linked list of increasing memory size of corresponding user blocks.

In contrast, Applicant's control blocks are assigned one "to each basic unit of user memory". Thus, each of Applicant's control blocks is associated with a common size block of user memory.

In Celi, the memory allocation process consists of going through the control blocks until a control block for a sufficiently large user block is found; assigning that user block if the associated user block is available; and searching further in the linked list for a control block having an associated available user block if it is not available. In contrast, Applicant teaches:

collecting groups of contiguous available control blocks into a plurality of linked list each list for storing a plurality of elements, each element comprising a control block group having an associated minimum size user block;  
...searching for a linked list having available control block groups corresponding to user blocks at least as large as the requested size;

Thus, in contrast to Celi, Applicant's method does not involve searching for a single control block, but involves searching for a linked list of contiguous control blocks having the associated minimum user block size required to respond to the allocation request. As stated in the previous clause, groups of contiguous available control blocks are collected into a linked list, each element of the linked list for storing the information about one of the groups of contiguous control blocks of that list. In rejecting claims 1 and 11, the Examiner cited that memory blocks of Celi's FIG. 4 have corresponding memory control blocks of FIG. 3. The memory control blocks of Celi's FIG. 3 do not each correspond to a basic unit of user memory but each correspond to an allocated or unallocated block of user memory; generally, except, possibly, for the first elements of Celi's linked list, each such block comprises a plurality of basic units. As can be seen from the examination of FIG. 4 and 3, the memory control blocks correspond to different sizes of user memory blocks.

The Examiner cited that the linked lists of unallocated (available in Applicant's claim) control blocks of FIG. 3 are collected into linked lists (true), each list for storing available control blocks having an associated minimum user block size. The elements of FIG. 3 are stored in order of increasing size. In contrast, each of Applicant's linked lists is for storing information about groups of contiguous available control blocks, the contiguous available control blocks each corresponding to an associated minimum size user memory block. Celi shows only a single such linked list wherein the linked list contains control blocks, each control block corresponding to one of the smallest to the largest block of user memory. Clearly, some of Celi's control blocks must correspond to a plurality of basic units of user memory; otherwise, Celi's method would not allow for the allocation of a block of user memory larger than the basic unit.

Applicant further recites the clause:

in response to a request for a block of user memory, searching for a linked list having available control block groups corresponding to user blocks at least as large as the requested size....

In contrast, Celi teaches searching the one linked list (Applicant claims a plurality) until the system finds a control block corresponding to a sufficiently large user block. The single linked list, which can contain control blocks for both very small and very large user blocks, is searched; this is in contrast to searching for one of a plurality of linked lists as in Applicant's invention.

From the above, it is clear that Celi has an entirely different arrangement for allocating memory and that the steps recited for Applicant's invention clearly differentiate that invention from the method of Celi.

Accordingly, Applicant respectfully submits that the subject matter of claims 1 and 11 is not anticipated by the teachings of Celi.

Further, concerning claims 7 and 12, Applicant discloses "ordering said linked lists by size". This is in distinction to Celi who teaches ordering the control blocks of a single linked list by size of the corresponding user memory block. Concerning the subject matter previously recited in claims 9 and 19, now incorporated in claims 1 and 11, Applicant teaches the memory control blocks as being contiguous. (See Applicant's FIG. 1.) In contrast, as the Examiner noted, Celi teaches control blocks linked to each other. The reason for having the control blocks contiguous, is that the corresponding basic units of user memory are contiguous. (See Applicant's FIG. 1.) This permits the system to readily find the user block corresponding to each control block and to simplify the process of allocating and deallocating user memory blocks.

Accordingly, Applicant respectfully submits that the subject matter of claims 1 and 11 is not taught by Celi and should therefore be held allowable. Claims 2-8, 10; and 12-18, 20 should also be held allowable as being dependent from an allowable independent claim.

Accordingly, Applicant respectfully requests that the Examiner reconsider the grounds for the rejection of the claims as amended, allow these claims, and pass the application to issue.

collecting groups of contiguous available control blocks into a plurality of linked list each list for storing a plurality of elements, each element comprising a control block group having an associated minimum size user block;  
...searching for a linked list having available control block groups corresponding to user blocks at least as large as the requested size;

Thus, in contrast to Celi, Applicant's method does not involve searching for a single control block, but involves searching for a linked list of contiguous control blocks having the associated minimum user block size required to respond to the allocation request. As stated in the previous clause, groups of contiguous available control blocks are collected into a linked list, each element of the linked list for storing the information about one of the groups of contiguous control blocks of that list. In rejecting claims 1 and 11, the Examiner cited that memory blocks of Celi's FIG. 4 have corresponding memory control blocks of FIG. 3. The memory control blocks of Celi's FIG. 3 do not each correspond to a basic unit of user memory but each correspond to an allocated or unallocated block of user memory; generally, except, possibly, for the first elements of Celi's linked list, each such block comprises a plurality of basic units. As can be seen from the examination of FIG. 4 and 3, the memory control blocks correspond to different sizes of user memory blocks.

The Examiner cited that the linked lists of unallocated (available in Applicant's claim) control blocks of FIG. 3 are collected into linked lists (true), each list for storing available control blocks having an associated minimum user block size. The elements of FIG. 3 are stored in order of increasing size. In contrast, each of Applicant's linked lists is for storing information about groups of contiguous available control blocks, the contiguous available control blocks each corresponding to an associated minimum size user memory block. Celi shows only a single such linked list wherein the linked list contains control blocks, each control block corresponding to one of the smallest to the largest block of user memory. Clearly, some of Celi's control blocks must correspond to a plurality of basic units of user memory; otherwise, Celi's method would not allow for the allocation of a block of user memory larger than the basic unit.

Applicant further recites the clause:

in response to a request for a block of user memory, searching for a linked list having available control block groups corresponding to user blocks at least as large as the requested size....

If the Examiner feels that a voice or fax contact would help to advance the prosecution of this application, he is invited to contact Applicant's attorney at telephone number 630 469-3575.

Respectfully submitted

A. A. Charles



by Werner Ulrich  
Attorney for Applicant  
Reg. No. 30810

Date: June 19, 2006